ABSTRACT OF THE DISCLOSURE

An optical fiber making apparatus has a main pipe connected to the furnace core tube, two branch pipes branching from the main pipe, and a gas source, a valve and a flow meter connected to each of the branch pipes. The flows or compositions of the inert gases supplied from the gas sources into the furnace core tube are varied. This changes the amount of heat applied to the lower end of the optical fiber preform, without depending solely on the main heater, to adjust the draw tension and thereby change the local chromatic dispersion along the longitudinal direction of the optical fiber being manufactured.